Introduction to Aquatic Ecology with SCUBA Lab

EBIO/ENST 379

Instructor:
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Scuba:
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REQUIREMENTS: Read and sign scuba gear rental and liability statements.

Students must provide personal scuba gear (i.e., mask, fins, snorkel, booties) by the 1st pool session (March 18th). Students can choose to purchase their personal gear through the course for $216.50 (pay by check or cash). If paying by check, please make the check payable to "Maximum Scuba". If paying with cash, please bring exact change. All other gear (tanks, BCD, regulators, weights) will be provided.

The information contained in this syllabus, other than the absence policies, may be subject to change with reasonable advance notice, as deemed appropriate by the instructor.

Overview

This 1-credit course **meets the 2nd half of the semester** and will introduce students to aquatic ecology and the study of underwater environments. Students will study fundamentals of coral reef ecosystems and one of the largest aquifer-driven freshwater spring-systems in the world: Edwards Aquifer (San Marcos, TX). Students will utilize SCUBA in a scientific context by conducting underwater fieldwork and habitat restoration in Spring Lake (Edwards Aquifer). Students are expected to attend and actively participate in all portions of this course, including all dives and weekend field trips.

Course Learning Goals

By the end of the course, you will be expected to be able to:

--Complete the Divers Authorization Course at Spring Lake (Edwards Aquifer) by passing all relevant quizzes and demonstrating proficient scuba diving skills in open water;
---Recognize some common coral reef benthic groups and understand why they are important;
---Describe some physical features of Spring Lake (Edwards Aquifer) and how these relate to the lake's eight resident threatened species and ongoing restoration and archaeological efforts;
---Recognize important Edwards Aquifer taxonomic and trophic groups;
---Quantitatively assess reef and freshwater habitats in terms of benthic cover and health state;
---Generate a valid scientific hypothesis and suggest feasible ways to test it;
---Locate peer-reviewed research articles and extract meaningful information related to a topic of interest; and
---Write a scientific report that is consistent with published peer-reviewed journal articles in

terms of format, terminology, grammar, tables, figures, and citations.

Course Meetings (W 6:30-10:00 pm in Recreation Center, RCC 160A)
Due to the nature of the course, attendance at each scheduled course meeting is mandatory, including weekend dive dates. In extenuating circumstances, permission to miss a course meeting must be obtained from the instructor in advance of the scheduled class. During regular course meetings, we may meet in the classroom and/or pool.

Course Readings
There is a required textbook for this course: The San Marcos: A River's Story (http://www.amazon.com/The-San-Marcos-Sponsored-Environment/dp/1585445428). All other required readings are available on Canvas.

Evaluation
In-class participation: 8 mandatory course meetings x 25 points each = **200 points total**
Ecology Quizzes: 3 quizzes x 100 points each = **300 points total**
Coral Reef Lab Report: **300 points**
Spring Lake Taxon ID sheets: **250 points**
Spring Lake Lab Report: **350 points**
TOTAL: 1400 points

Course Website
This course is beta testing Canvas (rather than using Owl-Space) during Spring 2016. Readings, assignments and announcements will be posted on the course's Canvas site, which you can find by going to https://canvas.rice.edu/.

Disabilities
If you have a disability that will impact your work in this class, please speak with the instructor during the first two weeks of class. All discussions will remain confidential. Additionally, you must contact Disability Support Services (http://dss.rice.edu/) located in the Allen Center, Room 111.

Honor Code
Quizzes are open notes, closed book, and closed Internet. Students are expected to work in groups during in-class laboratory exercises, but all laboratory reports should be completed individually. Any sources used to complete a lab report, including materials provided as part of the class (i.e., lectures and readings posted on Canvas), must be properly cited.

Schedule

Day 1: ****MONDAY, March 7****
Location: Room 160A, Rice Rec Center
Time: 6:30 PM

Couse Introduction (Correa & Baber)
Read and sign scuba gear rental and liability waiver.
Course overview
Introduction to quantifying benthic cover

(NO MEETING ON WEDNESDAY, MARCH 9TH)
(NO MEETING ON WEDNESDAY, MARCH 16TH)

Day 2: ****FRIDAY, March 18****
Location: Pool, Rice Rec Center
Time: 6:30 – 10 PM

Aquatic Ecology Quiz 1 (Available via Canvas March 8th at noon – 6:30 PM on March 18th)

Issue and fit scuba gear
Review scuba gear care and handling

POOL DIVE: Quantifying coral reef benthic cover

Day 3: **March 23**
Location: Room 160A and Pool, Rice Rec Center
Time: 6:30 – 10 PM

Aquatic Ecology Quiz 2 (Available via Canvas March 8th at noon – 6:30 PM on March 23rd)

POOL DIVE: Coral Reef Monitoring and Restoration, DAC Training

Day 4: **March 30**
Location: Room 160A, Rice Rec Center
Time: 6:30 – 10 PM

Aquatic Ecology Quiz 3 (Available on Canvas March 8th at noon – 6:30 PM on March 30th)

POOL DIVE: If needed, additional session to complete Coral Reef Lab and DAC Training.

Day 5: April 9-10 (Saturday and Sunday)
Location: Spring Lake, San Marcos, TX
Time: 6:00 AM Saturday – 6:00 PM Sunday

DAC Course (Saturday)
Field Work (Sunday)

Possible Extra Science Meeting: **April 13**
Location: Room 160A, Rice Rec Center
Time: 6:30 PM

As needed to discuss or analyze field data, depending on how work in San Marcos goes on April 9-10.

Day 6: April 16-17 (Saturday and Sunday)
Location: Spring Lake, San Marcos, TX
Time: 6:00 AM Saturday – 6:00 PM Sunday

Field Work (Saturday)
Field Work (Sunday)